

DOCUMENT RESUME

ED 346 268

CE 061 277

TITLE Autobody Technology. Technical Committee Report.
INSTITUTION Idaho State Dept. of Education, Boise. Div. of
Vocational Education.
REPORT NO Vo-Ed-118T
PUB DATE 90
NOTE 13p.; For related documents, see CE 061 278-287.
PUB TYPE Guides - Classroom Use - Teaching Guides (For
Teacher) (052)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Auto Body Repairers; *Behavioral Objectives;
Competence; Competency Based Education; *Job
Analysis; *Job Skills; Motor Vehicles; Occupational
Information; *Repair; Secondary Education; State
Curriculum Guides; *Trade and Industrial Education;
Vocational Education
IDENTIFIERS Idaho

ABSTRACT

This Technical Committee Report prepared by industry representatives in Idaho lists the skills currently necessary for an employee in that state to obtain a job in autobody technology, retain a job once hired, and advance in that occupational field. (Task lists are grouped according to duty areas generally used in industry settings and are used as the basis for modules in the statewide curriculum guide development process and for generating student profiles.) The first section of the guide is the task profile, which provides the Idaho code number for the occupation and outlines major concepts/content, laboratory activities, teaching considerations, and intended outcomes. The guide then lists the following 18 tasks with subtasks (competencies) for autobody technology: Vocational Industrial Clubs of America (VICA) and employability skills; safety; tools and equipment; identification of automotive bodies and frames; management and inventory of disassembled parts; cutting and welding; basic panel repair; panel replacement; body and frame alignment; steering and suspension; electrical systems; trim, accessories, and hardware; thermoplastic and fiberglass repair; glass replacement; painting and refinishing; estimating; detailing and preparation for delivery; and miscellaneous techniques and services. (KC)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

CE

ED346268

Vo.Ed. 118T

TECHNICAL COMMITTEE REPORT FOR AUTOBODY TECHNOLOGY

Invest in Success



STATE DIVISION OF VOCATIONAL EDUCATION

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- ☐ This document has been reproduced as received from the person or organization originating it.
- ☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

1990

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

T. Anderson

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

CF061277

Idaho State Board for Vocational Education

Gary G. Fay, President
Twin Falls

Keith Hinckley
Blackfoot

Colleen Mahoney
Lewiston

Roberta L. Fields
New Meadows

M. Karl Shurtliff
Boise

J. Ray Cox
Hayden Lake

Jerry L. Evans
Boise

Trudy Anderson, State Administrator
Division of Vocational Education

It is the official policy of the Division of Vocational Education that no person shall, on the grounds of race, handicap, sex, religion, creed, national origin or age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program, activity, or employment.

INTRODUCTION

The curriculum development process undertaken by the Idaho Division of Vocational Education involves the active use of industry personnel. Industry personnel comprise the sole membership on Technical Committees which are responsible for the development of Task Lists for each program. A Technical Committee Report is prepared on completion of the Committee's assignment. This publication is the Technical Committee Report.

The Task List prepared in the Technical Committee Report reflect the current trends and skills necessary for an employee to: 1) Obtain a job in Idaho's industry, 2) retain a job once hired, and, 3) to advance in the occupational field. Task Lists are grouped according to Duty areas generally used in industry settings. Duty areas are used as the basis for modules in the Statewide Curriculum Guide development process. The Technical Committee segment is the single most significant step in the curriculum development process. All future curriculum activities are predicated on the premise that an accurate picture of industry needs are reflected in the Task List.

Instructional personnel are selected to develop the Statewide Curriculum Guide. These instructors write Performance Objectives for each Task and the subsequent Enabling Objectives for each Performance Objective. The committee members prepare all material in a competency-based format so as to have an effective and efficient methodology for determining student progress. The Statewide Guides are designed as the prime determiner of program content. All programs must follow the established Guide in order to be approved for operation. Any deviation from this Guide requires written approval from the respective program supervisor at the Division of Vocational Education. It is not the intent of the Division that all programs be designed to be exactly the same, but assurance is needed to ensure that the program meets the minimum standards for operation, based on the community needs, equipment, and facilities available to the local school or institution.

The Technical Committee Report does not dictate the level of instruction. The Task List developed represents the entire occupational field. Schools and Institutions determine what skills can be taught and what depth of instruction can be provided. They must choose the Tasks to be taught from the Technical Committee Report but are free to determine how many or which ones can be incorporated into their program.

The Technical Committee Report is also used as the primary list for generating Student Profiles. These Profiles are used as a cumulative record of each student's progress. They are printed in a folder format and have levels of performance scales for each Task so that student competence can be recorded for individual skills or tasks. This document will become the main component for Articulation activities in the event that the student desires to go on for additional training or education.

ACKNOWLEDGEMENTS

The Technical Committee process involves personnel from industry who are selected by the Division with assistance from the State Council on Vocational Education. People who serve on the Committees are nominated by local administrators. They generally come from local advisory committees for existing Vocational Education programs or are community representatives in a capacity to provide the necessary information about industry needs. These people serve with the approval of their employers and give their time and energies to the project without cost. The Division provides reimbursement for per diem and travel. We are indebted greatly to these industry representatives and to their employers for the resources so freely given to the pursuit of ensuring that Idaho students receive the most current training and education possible and that which is demanded by industry.

To this end, the Division recognizes the following people who served on the Autobody Technical Committee: Harry Layman, Pocatello; Gerald Kelly, Boise; Bob Jackson, Lewiston; Mike Williams, Burley; Keith Applegate, Boise, and Dick Novak, Boise.

Your support and assistance was very greatly appreciated. Your patience for enduring the educational process is also noted. The students and instructional staff will be much more able to accomplish their respective goals as a result of your contributions.

Sho Ueda, Supervisor
Trades, Industrial & Technical Education

Don Eshelby
Director of Program Services

TASK PROFILE

CURRICULUM FRAMEWORK

PROGRAM AREA: Trade & Industrial

IDAHO DIVISION OF VOCATIONAL EDUCATION

REVISION DATE: May, 1990

PROGRAM TITLE: Autobody Technology

IDAHO CODE NUMBER: 6031

CIP #: 47.0603

- I. **MAJOR CONCEPTS/CONTENT:** The purpose of this program is to prepare students for employment as automobile body repairers (807.391-010), automotive painters (845.381-014), automobile body repairer helpers (807.687-010), and automotive painter helpers (845.684-014), or to provide supplemental training for persons previously or currently employed in these occupations.

The content includes, but is not limited to, communication skills, leadership skills, human relations and employability skills, safe and efficient work practices, basic trade skills, refinishing skills, sheet metal repair skills, frame and unibody squaring and aligning, use of fillers, paint systems and undercoats, related welding skills, related mechanical skills, trim-hardware maintenance, glass servicing, and other miscellaneous repairs.

- II. **LABORATORY ACTIVITIES:** Shop or laboratory activities are an integral part of this program and provide instruction in, but are not limited to, use of hand and power tools, panel repairs, use of spray equipment, use of frame and alignment equipment, application of body fillers, paint systems, use of shop materials, glass replacement, and the use of MIG, oxyacetylene, and plastic welders.

- III. **SPECIAL NOTE:** The Vocational Industrial Clubs of America, Inc., is an appropriate vocational student organization for providing communications, leadership, human relations, and employability training experiences and for reinforcing specific vocational skills. When provided, these activities are considered an integral part of this instructional program.

The cooperative method of instruction may be utilized for this program. Whenever the cooperative method is offered, the following is required for each student: a training plan, signed by the student, teacher and employer which includes instructional objectives and a list of on-the-job and in-school learning experiences; and a work station which reflects equipment, skills and tasks relevant to the occupation the student has chosen as a career goal. The student must receive compensation for work performed.

The particular outcomes and student performance standards which the handicapped student must master to earn credit must be specified in the student's individual educational plan (IEP). Additional credits may be earned when outcomes and standards are mastered in accordance with the requirements indicated in subsequent IEP's. The job title for which the student is being trained must be designated in the IEP.

The typical length of this program for the average achieving postsecondary student is 1800 contact hours (2160 clock hours) The recommended length for secondary programs is 900 hours with multi-period blocks of instruction provided to accomplish a major portion of the listed competencies.

IV. **INTENDED OUTCOMES:** After successfully completing this program, the individual will be able to:

01. Demonstrate VICA leadership and employability skills.
02. Demonstrate shop and occupational safety skills.
03. Demonstrate proper use of tools and equipment.
04. Demonstrate identification of automotive bodies and frames.
05. Demonstrate management and inventory of disassembled parts.
06. Perform cutting and welding operations.
07. Perform basic panel repair.
08. Perform panel replacement.
09. Perform body, frame, and wheel alignment.
10. Inspect, remove and replace suspension systems.
11. Inspect, test, remove and replace electrical components.
12. Inspect, remove and replace align trim accessories and hardware.
13. Perform thermoplastic and fiberglass repair.
14. Perform glass replacement.
15. Demonstrate painting and refinishing procedure.
16. Perform estimating procedures.
17. Demonstrate detailing and preparation for delivery.
18. Demonstrate miscellaneous techniques and services.

AA = Advanced Skills

BC = Basic Core

HP = High Priority

TASK LISTING

STUDENT PERFORMANCE STANDARDS

EFFECTIVE DATE: May, 1990

PROGRAM AREA: Trade & Industrial

PROGRAM TITLE: Autobody Technology

01.0 VICA AND EMPLOYABILITY SKILLS

The student will be able to:

- 01.01 Describe the VICA purpose, motto, pledge, and symbols.
- 01.02 Identify and use the principles of parliamentary procedure.
- 01.03 Identify and demonstrate the principles of public speaking.
- 01.04 Identify the ingredients of good leadership.
- 01.05 Identify employment opportunities.
- 01.06 Apply employment-seeking skills.
- 01.07 Interpret employment capabilities.
- 01.08 Demonstrate appropriate work behavior.
- 01.09 Maintain a business like image.
- 01.10 Maintain working relationships with others.
- 01.11 Adapt to change.
- 01.12 Demonstrate a knowledge of business.

02.0 SAFETY

The student will be able to:

- 02.01 Apply shop safety rules and procedures.
- 02.02 Apply personal safety rules procedures.
- 02.03 Apply fire safety rules and procedures.

03.0 TOOLS AND EQUIPMENT

The student will be able to:

- 03.01 Identify, choose, use and care for body repair hand tools.
- 03.02 Identify and use of power tools and equipment.
- 03.03 Identify and care for refinishing equipment.

04.0 IDENTIFICATION OF AUTOMOTIVE BODIES AND FRAMES

The student will be able to:

- 04.01 Identify types of frames.
- 04.02 Identify body parts and their means of attachment.

05.0 MANAGEMENT AND INVENTORY OF DISASSEMBLED PARTS

The student will be able to:

05.01 Manage, inventory, and store disassembled parts.

06.0 CUTTING AND WELDING

The student will be able to:

- 06.01 Set up an oxyacetylene station.**
- 06.02 Layout and burn straight cuts in mild steel.**
- 06.03 Light and adjust a welding torch.**
- 06.04 Carry a puddle without filler rod (flat position).**
- 06.05 Carry a puddle with filler rod on mild steel (flat position).**
- 06.06 Construct a butt joint weld (all positions).**
- 06.07 Construct a lap joint weld (all positions).**
- 06.08 Set up and adjust a gas metal arc welding (GMAW) station.**
- 06.09 Weld a straight bead pattern on mild and high strength steel (flat position).**
- 06.10 Weld a straight bead pattern on aluminum (flat position).**
- 06.11 Construct a butt joint weld (all positions).**
- 06.12 Construct a lap joint weld (all positions).**
- 06.13 Construct a plug weld.**
- 06.14 Spot weld components.**

07.0 BASIC PANEL REPAIR

The student will be able to:

- 07.01 Rough out and align steel panels.**
- 07.02 Shrink stretched areas on steel panels.**
- 07.03 Finish metal panels.**
- 07.04 Fill and finish depressed area.**
- 07.05 Repair rusted areas.**

08.0 PANEL REPLACEMENT

The student will be able to:

- 08.01 Remove and replace a bolt-on panel.**
- 08.02 Remove and replace a weld-on panel.**
- 08.03 Remove, replace, and align a door.**
- 08.04 Remove, replace, and align hood and deck panels.**
- 08.05 Remove, align, and replace a unitized weld-on panel.**

09.0 BODY AND FRAME ALIGNMENT

The student will be able to:

- 09.01 Determine conventional body shell and frame alignment.
- 09.02 Align conventional body shell and frame.
- 09.03 Repair frame horns and cross members.
- 09.04 Determine unitized body shell alignment.
- 09.05 Align a unitized body shell.

10.0 STEERING AND SUSPENSION

The student will be able to:

- 10.01 Inspect steering gear and linkage.
- 10.02 Adjust steering sector (manual and power).
- 10.03 Remove and replace steering components.
- 10.04 Replace rack and pinion steering assembly.
- 10.05 Align front suspension, power train and steering components.
- 10.06 Align rear suspension and power train.
- 10.07 Remove and replace steering wheel and mast jacket.
- 10.08 Repair tilt and/or telescopic steering wheel column.
- 10.09 Inspect, remove, and replace dual control arm suspension system.
- 10.10 Inspect, remove, and replace McPherson strut suspension assembly.

11.0 ELECTRICAL SYSTEMS

The student will be able to:

- 11.01 Perform battery service(s).
- 11.02 Test, remove, and replace a switch.
- 11.03 Test, remove, and replace a fuse.
- 11.04 Test, remove, and replace circuit breaker.
- 11.05 Remove and replace a wiring harness.
- 11.06 Remove and replace a lamp socket.
- 11.07 Perform an operational test of lighting circuits.
- 11.08 Remove, replace, and adjust headlights.
- 11.09 Test, remove and replace horn circuit, relay, and horn assembly.
- 11.10 Test an electric motor.
- 11.11 Remove and replace a power window motor.
- 11.12 Remove and replace power seat controls.
- 11.13 Remove and replace a power seat motor.
- 11.14 Remove and replace a power antenna assembly.
- 11.15 Remove and replace an antenna.

12.0 TRIM, ACCESSORIES AND HARDWARE

The student will be able to:

- 12.01 Identify fasteners.
- 12.02 Remove, replace and align a bumper.
- 12.03 Remove and replace energy absorbers.
- 12.04 Remove and replace a grille.
- 12.05 Remove and replace a padded dashboard.
- 12.06 Inspect, remove and replace seat and shoulder belts.
- 12.07 Remove and replace trim panels.
- 12.08 Remove and replace moldings.
- 12.09 Install weatherstripping.
- 12.10 Remove, replace, and align door locks and mating parts.
- 12.11 Remove, replace, and align a trunk lock and mating parts.
- 12.12 Remove, replace, and align a hood latch and mating parts.
- 12.13 Remove, replace, and adjust window regulators.
- 12.14 Remove and replace seat tracks.
- 12.15 Detach and re-glue a vinyl top section.

13.0 THERMOPLASTIC AND FIBERGLASS REPAIR

The student will be able to:

- 13.01 Restore or replace a fiberglass panel.
- 13.02 Demonstrate proper airless welding techniques.
- 13.03 Prepare, chemically bond, and finish thermoplastic components.
- 13.04 Correct or repair distortion in a plastic component.

14.0 GLASS REPLACEMENT

The student will be able to:

- 14.01 Remove and replace sealed type stationary glass.
- 14.02 Remove and replace gasket type stationary glass.
- 14.03 Install a windshield-mounted rearview mirror.
- 14.04 Remove and replace regulator-controlled movable glass.
- 14.05 Remove and replace pivot glass and pivot assembly.
- 14.06 Remove and replace sliding glass.
- 14.07 Locate and seal leaks around a windshield or rear window.

15.0 PAINTING AND REFINISHING

The student will be able to:

- 15.01 Clean surfaces for primer, sealer, and undercoating.
- 15.02 Sand metal surfaces for primer, sealer, and undercoating.
- 15.03 Condition bare metal for primer, sealer, and undercoating.
- 15.04 Mask sections and parts.
- 15.05 Apply undercoats.
- 15.06 Match and apply finish coats.
- 15.07 Determine materials for a paint job.
- 15.08 Clean, compound and polish painted surfaces.
- 15.09 Prepare a plastic component for refinishing.
- 15.10 Refinish plastic components.
- 15.11 Remove and apply decals and striping.
- 15.12 Refinish vinyl surfaces (tops, dashes, and interior components).

16.0 ESTIMATING

The student will be able to:

- 16.01 Interpret a cost estimate for a paint job.
- 16.02 Complete a parts and materials order form.

17.0 DETAILING AND PREPARATION FOR DELIVERY

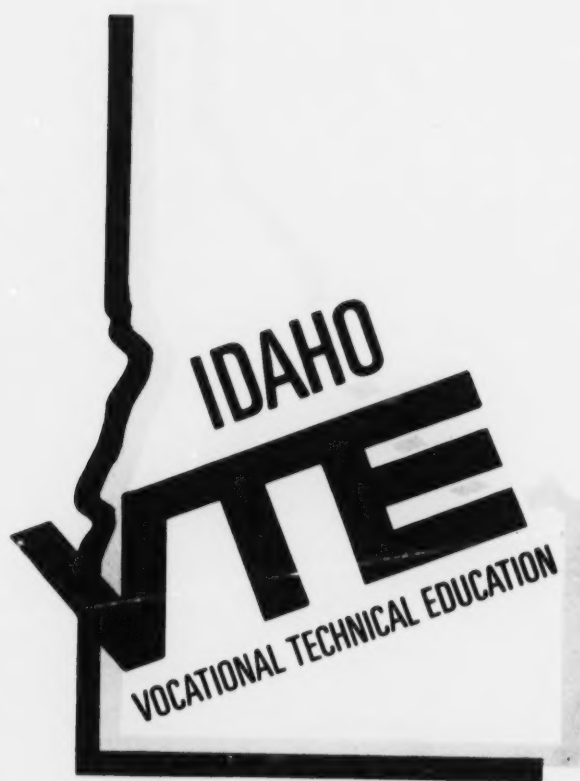
The student will be able to:

- 17.01 Perform interior detailing.
- 17.02 Perform exterior clean-up.
- 17.03 Perform final inspection for delivery.

18.0 MISCELLANEOUS TECHNIQUES AND SERVICES

The student will be able to:

- 18.01 Identify, inspect, pressure test, and restore the cooling system.
- 18.02 Identify, service, purge, test, repair, and charge an automotive air Conditioning system.
- 18.03 Remove and install an automobile engine and drive train in a safe and efficient manner.



BEST COPY AVAILABLE